

# Food Distribution: Terrorist Threats To Food Supplies

## NDIA

Non-Traditional Threats  
Posed by WMD

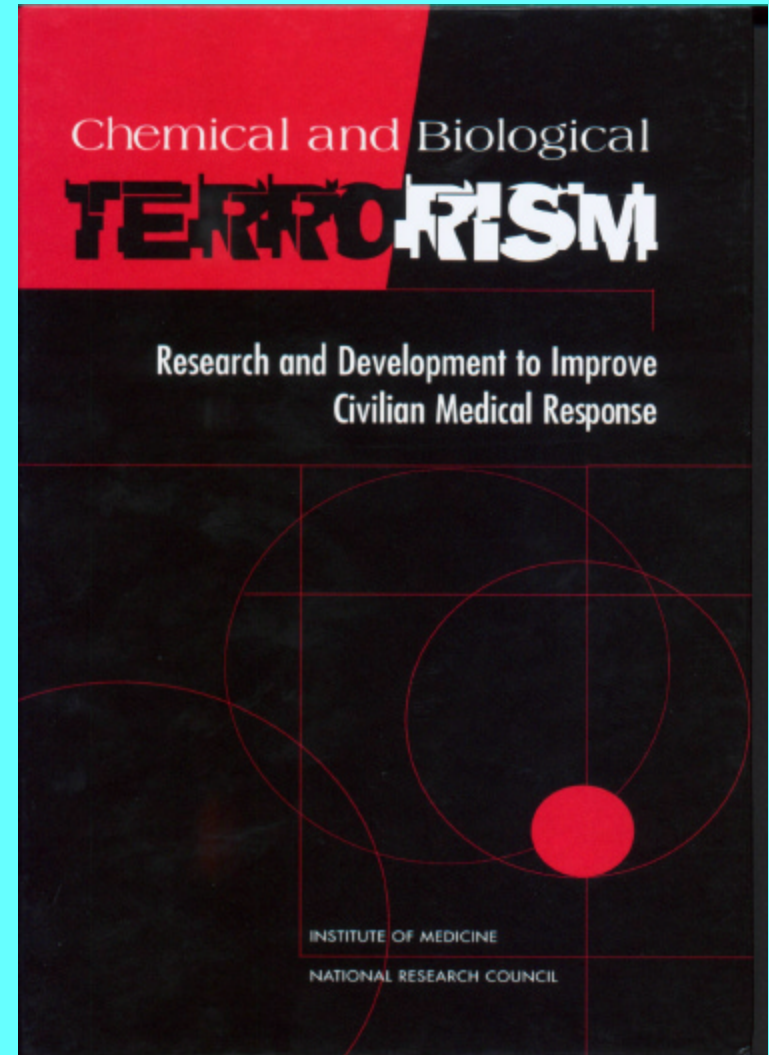
26 June 2002

David Moore, D.V.M., Ph.D.  
Battelle Memorial Institute



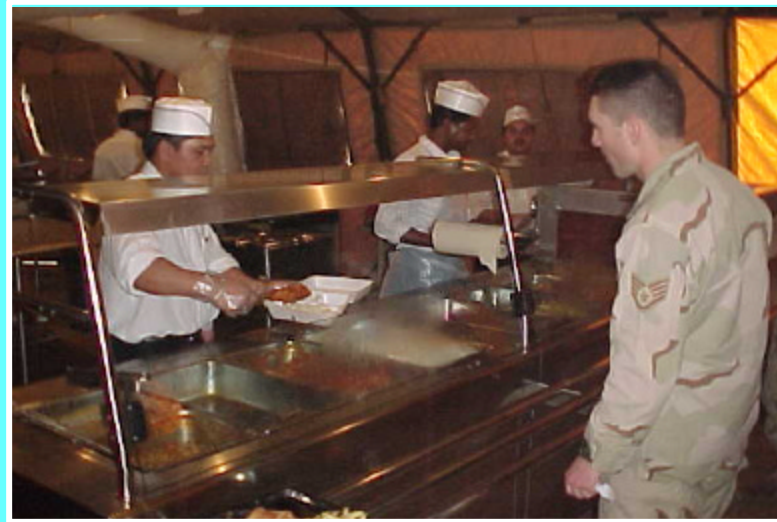
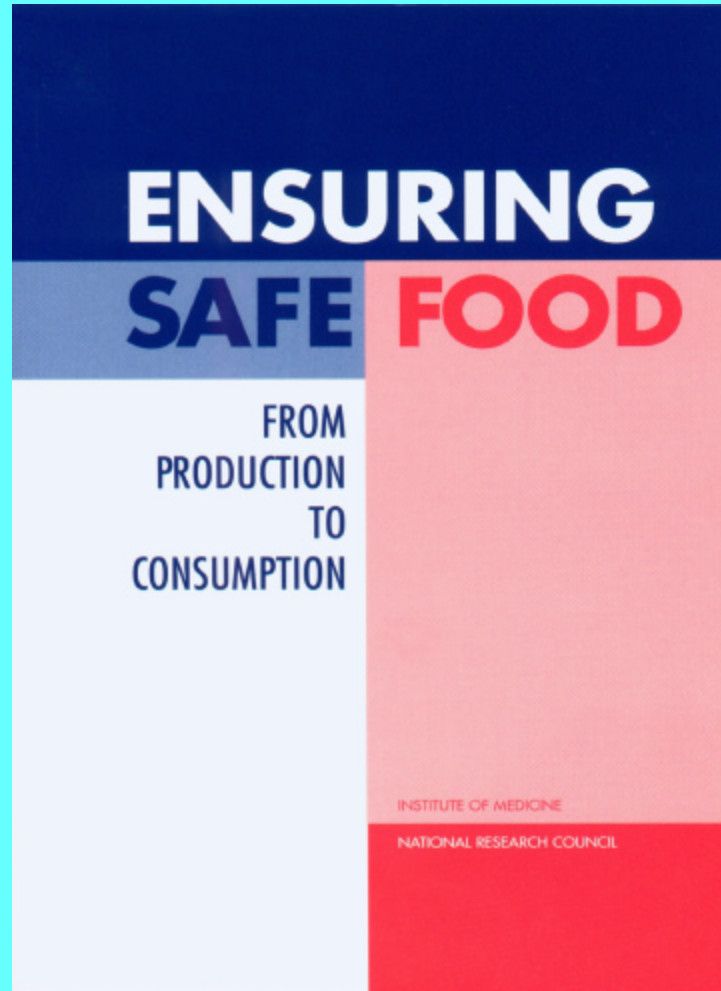
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# Vulnerabilities in Food Distribution?

Page 8A : Tuesday, May 1, 2001 : The Sun

## Terrorism up 8 percent, State Department says

South Asia is base for most attacks against U.S., annual report finds


FROM WIRE REPORTS

WASHINGTON — International terrorist attacks rose 8 percent last year from the previous year, largely because of an upsurge in the bombings of a Colombian oil pipeline by two terrorist groups there, according to a State Department report issued yesterday.

Overall, there were 423 terrorist attacks around the world, with 200 of them directed at the United States. The bombing attacks in Colombia accounted for much of the rise, officials said.

Critics have accused the United States of being motivated by ideology, politics or the state of bilateral relations more than a desire to flag a genuine threat to U.S. interests or suspect activities by a foreign government.

They point to Cuba's presence on the list years after President Fidel Castro stopped trying to export communist revolution.

 **SUN** Thursday, May 3, 2001 Section C

## French firm is buying all of Sodexho

Food service giant paying \$1.08 billion for Md. company

**'Nothing is changing'**

Sodexho Marriott recently signed deal with Marine Corps

By GUS G. SENTEMENTES  
SUN STAFF

In a move that will create the world's largest food service and facilities management group, Sodexho Alliance SA said yesterday that it will buy full control of

Kingdom in terms of annual sales and employees.

Sodexho Marriott, which recently signed an \$850 million food services contract with the Marine Corps, has 111,000 employees in 5,000 locations across North America.

The company offers food service and facilities management in several sectors, including corporate and health care settings, schools and universities.

Although Sodexho Marriott officials have said that the company is "recession-proof" because of its diversified businesses, analysts have said that a mature North American food-services mar- [See Sodexho, 8c]

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# Recent Examples

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- 1984 The Dalles, Oregon, members of a religious sect dispensed *Salmonella* bacteria in restaurant salad bars
- 1996 Texas, 12 laboratory workers sickened by *Shigella dysenteriae* after eating contaminated pastries
- *"small scale ... amateurish in design and ending with limited malefaction ...[they] touch on a set of timeliest concerns that unite national security and public health."* Joshua Lederberg

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# Recent Examples

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- 1978, Israeli fruit poisoned with metallic mercury was found in Dutch and German markets.
- 1996, Tajik poisoning of Russians, cyanide in champagne
- 1998, cyanide poisoning, food supplements, USA

# CB Food Terrorism

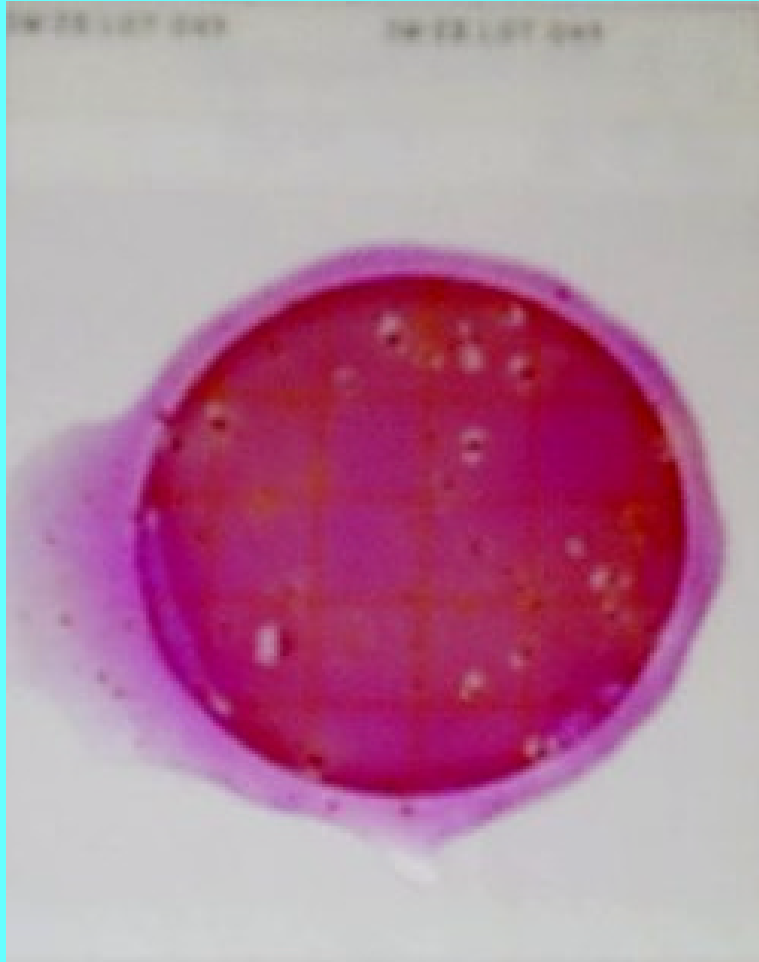
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- Historically, consumables are a lower technology approach
  - Lower cost, less risk to perpetrators
  - Ready access to bacterial cultures or toxic chemicals
  - Ease of dissemination
  - More select targeting, having both direct and indirect mission impact



# Consequences of CB Food Terrorism

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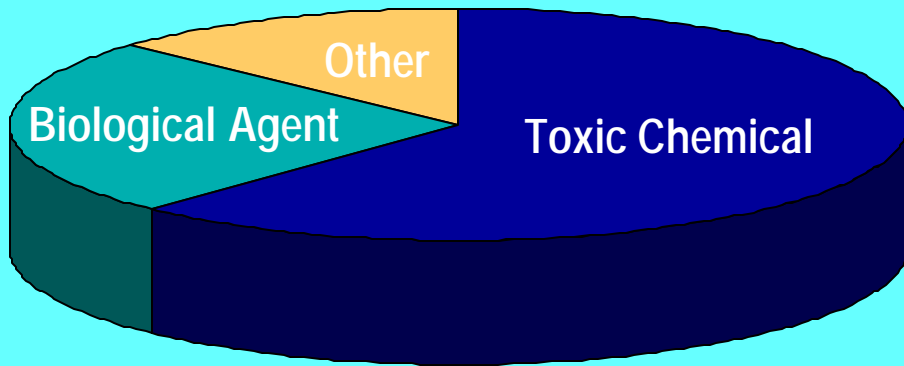
- Mass casualties possible
- Loss of confidence in the food supply
- Can have major economic impact
- Distinguishing terrorist activity from an outbreak of a naturally occurring disease may be extremely difficult.



# Modes of CB Terrorism

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Analysis of 404 Non-Military Incidents Involving Chemical or Biological Agents, Concludes:



**INVOLVED IN 3 OR MORE INCIDENTS**

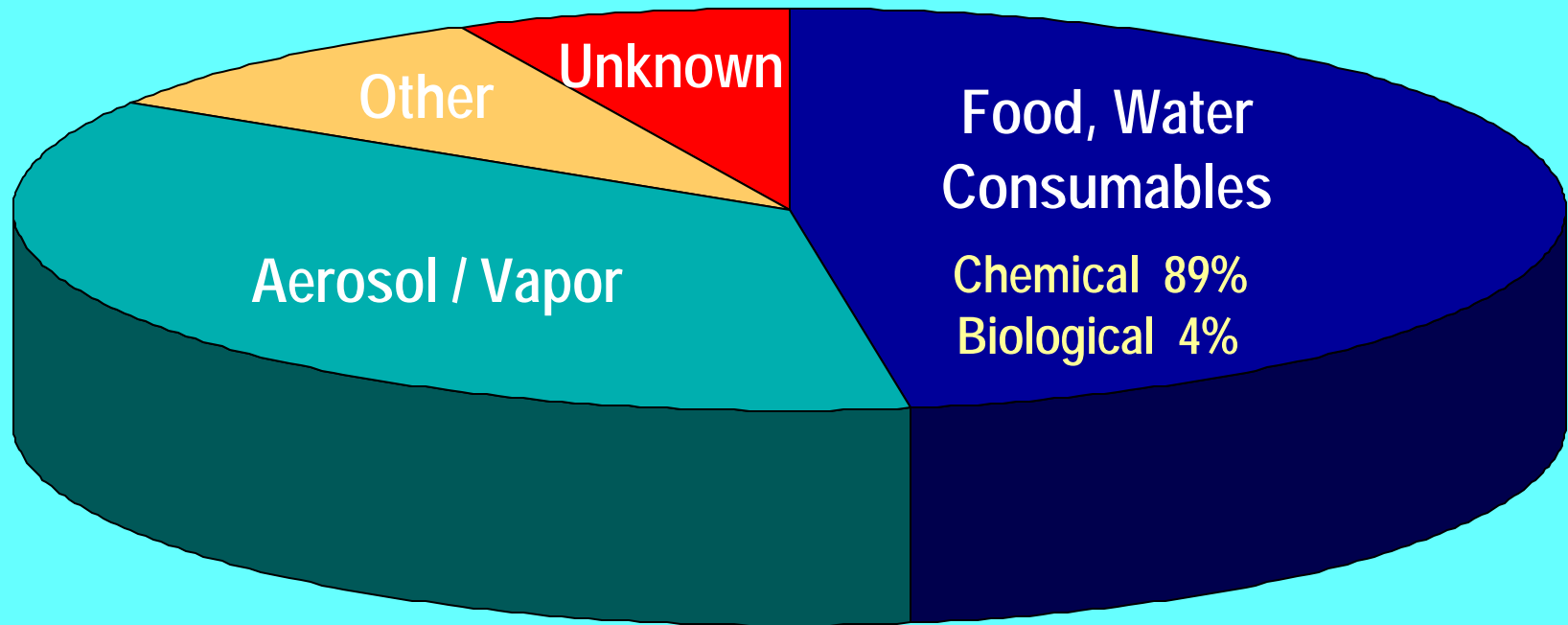
*Bacillus Anthracis*, Butyric Acid,  
Mercury, Botulinum Toxin, Warfarin,  
Thallium Salts, Ricin, Arsenic,  
Potassium Cyanide, Sarin  
Sodium Cyanide, LSD,  
Paraquat, Salmonella Sp., Strychnine,  
*Vibrio Cholera*, *Yersinia Pestis*

Harvey J. McGeorge, *Analysis of 404 Non-Military Incidents Involving Either Chemical or Biological Agents*. Proceedings, Chemical and Biological Medical Treatment Symposia, Dubrovnik, Croatia, April, 2001

# Modes of CB Terrorism

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Analysis of 233 past incidents of CB terrorism concludes .... top four means of delivery:



Harvey J. McGeorge, *Weaponization and Delivery of Chemical and Biological Agents: A Terrorism Perspective*. Proceedings, Chemical and Biological Medical Treatment Symposia, Dubrovnik, Croatia, April, 2001

# Food and Water Antiterrorism



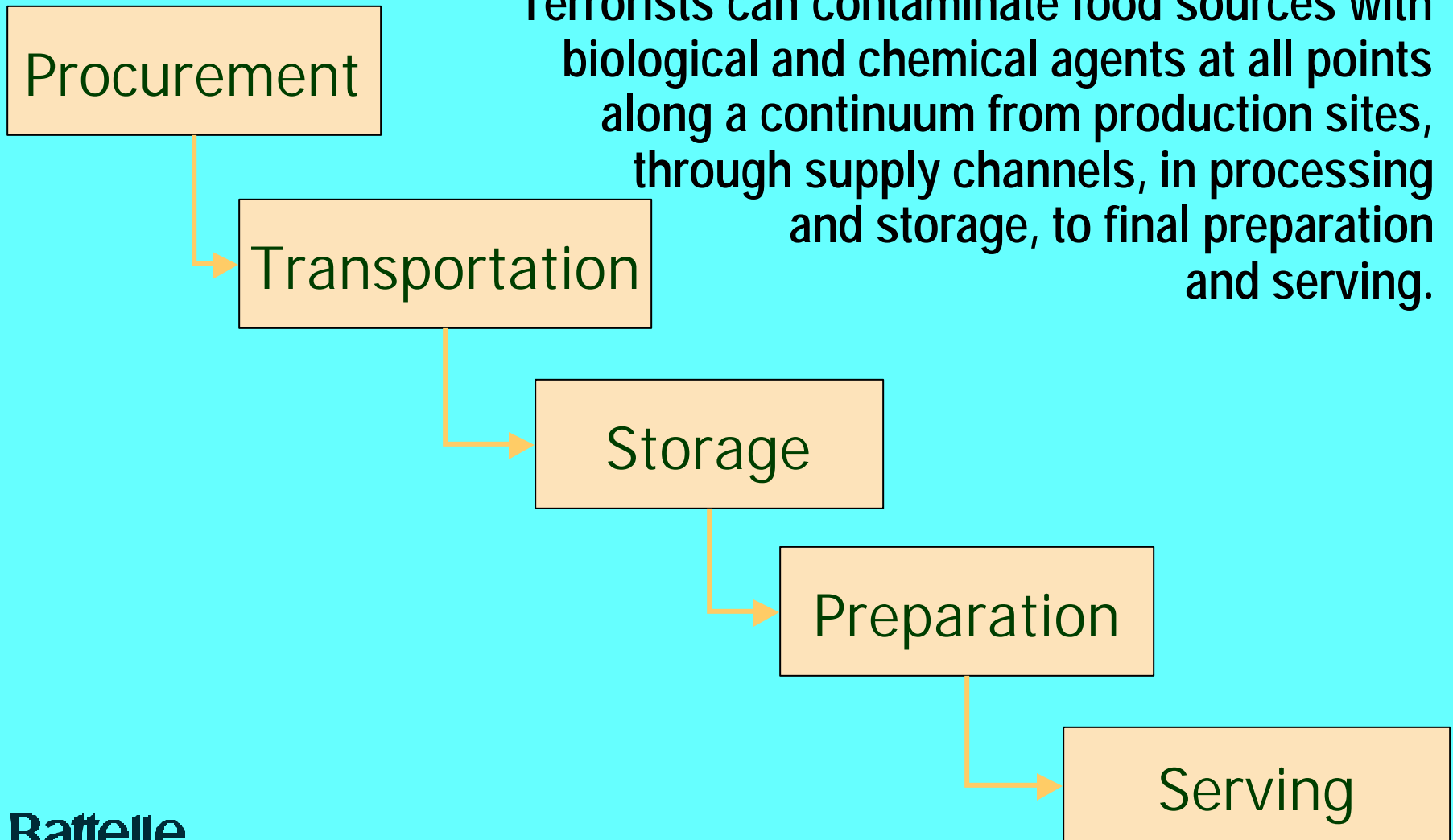
Problem: No institutionalized process to address *intentional contamination* of food or water

Solution: Identify secure food & water handling procedures, validate new equipment and institutionalize approach

# The Food Distribution Chain

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Terrorists can contaminate food sources with biological and chemical agents at all points along a continuum from production sites, through supply channels, in processing and storage, to final preparation and serving.





# Food Vulnerability Assessment

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- Map all likely supply chains for food from source through procurement, transportation, storage, preparation, and serving.
- Identify points along food chains where threats to the safety are greatest.
- Identify what the most likely threats are at each of the points in the food chain.

# Food Vulnerability Assessment - cont.

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- Determine options for minimizing threats to personnel from foods.
- Recommend security control measures to minimize threat potential in the food chain.
- Develop a simple methodology to identify food supply chains and potential threats in that chain to be used for making location or situation specific vulnerability assessments.

# Procurement

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## ■ Food Safety Needs

- Use approved sources
- Address security at origin
- Address food security in procurement contracts
  - Limit advance customer ID of food

## ■ Training

- Public health personnel
- Food service personnel
- Contracting personnel
- Drivers



# Transportation

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## ■ Food Safety Needs

- Unique seals on vehicles
- QA personnel verify shipping seals with shipping papers

## ■ Training

- Contracting officials trained to write transportation security needs into contracts
- Food service and public health personnel trained to monitor for signs of tampering on receipt of foods
- Drivers





# Storage

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## ■ Food Safety Needs

- Limit access to foods
- Food must be thought of as a security asset

## ■ Training

- Food service personnel
- Security personnel
- Public health personnel should also be trained on importance of limiting access

# Preparation and Serving

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## ■ Food Safety Needs

- Reliability of food service personnel
  - Traditional sanitation improved
  - Food quality increase
  - Security improved
- Increased security
  - Security cameras
  - Improved background checks

## ■ Training

- Leaders / managers, security, public health, and food service personnel must recognize intentional contamination as a real threat



# Testing Foods

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## ■ Food Safety Need

- Differentiate between natural and intentional contamination
  - Overlap with standard food safety/ QA issues
  - Categorize based on food type
- Where and when to test
- Frequency
- Laboratory confirmation--Where?

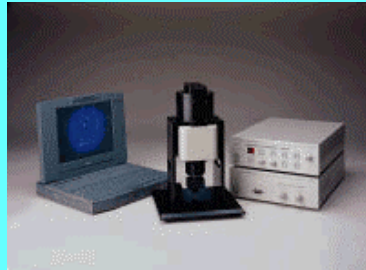
## ■ Technology

## ■ Training



# Commercial Microbiological Non-Specific Diagnostics

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- BacT / Alert
- MicroStar
- Celsis
- Bactometer
- Malthus
- BioSys



# State-of-the-Art Microbiological Diagnostics

## ■ 16 S rRNA PCR

- sensitive, rapid, technologically possible, commercially available reagents, commercially available equipment



## ■ UP-LINK Phosphorus I A

- sensitive, detector only

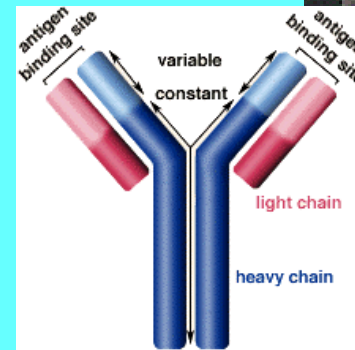
## ■ ORIGIN Chemiluminescence

- sensitive, can be used with RNA PCR, commercially available reagents, commercially available equipment



## ■ LPS EIA

- commercially available reagents, limited to Gram Neg Bacteria



# Summary

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- Institutionalize primary and secondary controls
- Primary Control--Security of the process is critical
- Secondary Control--Food testing to:
  - Deter
  - Verify HACCP system is working

# Food For Thought

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- Protection of food and water systems must be a balanced approach between an understanding of the threat, fully implementing routine food & water safety measures, application of technology, & improved safeguard and security measures
- No single/multiple technology or approach is available today to detect 100% of possible biological/chemical agents prior to consumption